

REMARKS

This responds to the Office Action dated March 1, 2005, and the references cited therewith.

Claims 1-3, 8-16, and 19 are amended herein. Claims 1-32 remain pending in this application.

Objection to the Specification

The specification was objected to due to various informalities. Applicant has amended the specification to overcome this objection.

§112 Rejection of the Claims

Claims 1-13 and 15-16 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant believes that the amendments contained herein have overcome these rejections.

§102 and §103 Rejection of the Claims

Claims 1-3 and 19 were rejected under 35 U.S.C. § 102(b) as being anticipated by Weijand (U.S. Patent No. 5,999,857). Claims 4-18 and 20-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Weijand (U.S. Patent No. 5,999,857) as applied to claims 3 and 19 above, and further in view of Rakib et al. (U.S. Patent No. 6,426,983). The rejections are traversed and reconsideration is respectfully requested.

Independent claims 1 and 14 have been amended to include a noise spectrum detector and noise spectrum detecting means, respectively, which detects a noise spectrum by discrete Fourier transforming a set of input samples to produce a power spectrum of the input signal and subtracting a template spectrum therefrom, the template spectrum corresponding to a representative input signal without noise. Independent claim 19 has been amended to recite the step of detecting a noise spectrum of the received signal by discrete Fourier transforming a set of input samples to produce a power spectrum of the input signal and subtracting a template spectrum therefrom, the template spectrum corresponding to a representative input signal without

noise. Applicant finds no teaching or suggestion in either Weijand or Rakib for detecting a noise spectrum in this manner. As best understood, Rakib teaches filtering an input signal into separate frequency bins and comparing the average power of a signal in a particular bin to a threshold value to determine if narrowband noise is present in the input signal. Rakib also teaches Fourier transforming signal samples in order to detect noise peaks (col. 7, lines 32-48), where such peaks are detected by comparing the amplitudes of the Fourier components of a particular bin to the average amplitude of the Fourier components of that bin. No teaching or suggestion is found in Rakib, however, for subtracting a template spectrum corresponding to a representative input signal without noise from a computed power spectrum of the input signal in order to detect narrowband noise. The particular situation dealt with by the Rakib system provides no motivation for detecting narrowband noise by subtracting a template spectrum from a power spectrum of the input signal because it only deals with a spread spectrum (viz., CDMA) signal. In a spread spectrum input signal, no discrete frequency peaks are present unless narrowband noise is present, and all that is required in order to detect narrowband noise is to determine if there are any frequency peaks above some defined threshold. Applicant therefore respectfully submits that claim 1, 14, and 19 patentably define over the prior art of record.

The recitations of dependent claims 2-13, 15-18, and 20-32 as amended are further limitations to the subject matter recited by claims 1, 14, or 19 as amended herein and are submitted to be neither taught nor suggested by the prior art of record in that context. With particular regard to the claims which recite subject matter relating to transmit pulse detection using a matched filter, applicant wishes to point out that the matched filter discussed in Rakib appears to be for the purpose of detecting the chips of a CDMA signal. Assuming for the sake of argument that chips are analogous to transmit pulses (applicant, however, makes no such admission), no discussion appears in the reference of any kind of adjustable threshold for the chip detection function. Rather, the adjustable threshold discussed in Rakib deals with further downstream processing used to detect noise peaks and not chips. Withdrawal of the rejections of claims 2-13, 15-18, and 20-32 is thus respectfully requested.

Double Patenting Rejection

Claims 1-18 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 23-30 of U.S. Patent No. 6,622,044. A terminal disclaimer is submitted herewith to overcome the rejection.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 10/649,406

Filing Date: August 27, 2003

Title: SYSTEM AND METHOD FOR REMOVING NARROWBAND NOISE

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Dkt: 279.278US2

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (847) 432-7302 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Signature

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 30 day of June, 2005.

